

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(currently amended)** A communication system for appointing a frequency assignment (FA) mode and/or a broadcast/multicast service (BCMCS) assignment ratio in a 1xEV-DO system in order to provide a BCMCS, the communication system comprising:

at least one access terminal (AT) for receiving a 1xEV-DO service or the BCMCS through the 1xEV-DO system;

a base station manager (BSM) for receiving BCMCS control information containing the FA mode and/or the BCMCS assignment ratio and transmitting a received BCMCS control information to a 1xEV-DO access network controller (ANC); and

an access network including a 1xEV-DO access network transceiver subsystem (ANTS) and the 1xEV-DO ~~ANC access network controller~~ for temporarily storing the received BCMCS control information and controlling a ~~kind and/or a ratio of a message, the message being transmitted to said at least one~~ ~~each~~ access terminal, according to the FA mode and/or the BCMCS assignment ratio contained in the BCMCS control information;

wherein

the 1xEV-DO ANC is configured for assigning a specific 1xEV-DO FA, from among 1xEV-DO FAs available for the 1xEV-DO service, to the BCMCS according to each access network area in the 1xEV-DO system;

the FA mode includes a dedicated BCMCS mode where the specific 1xEV-DO FA is allocated exclusively for the BCMCS, and a mixed BCMCS mode where the specific 1xEV-DO

FA is allocated to both the BCMCS and the 1xEV-DO service; and

in the mixed BCMCS mode, the 1xEV-DO ANC is configured for controlling a ratio of (i) a first portion of frequency capacity of the specific 1xEV-DO FA allocated to the BCMCS to (ii) a second portion of frequency capacity of the specific 1xEV-DO FA allocated to the 1xEV-DO in accordance with the BCMCS assignment ratio.

2-3. (canceled)

4. **(currently amended)** The communication system as claimed in claim 1, wherein ~~the BCMCS assignment ratio is inputted when the FA mode is a mixed BCMCS mode using the specific 1xEV-DO FA to provide both the BCMCS and the 1xEV-DO service, and wherein the~~ frequency capacity of the specific 1xEV-DO FA is allocated to the BCMCS and the 1xEV-DO service in accordance with the ~~inputted~~ received BCMCS assignment ratio.

5. (original) The communication system as claimed in claim 1, wherein the FA mode and/or the BCMCS assignment ratio is contained in a system parameter message for the BCMCS in the 1xEV-DO system and then transmitted.

6. (original) The communication system as claimed in claim 1, wherein the base station manager stores a BCMCS control program performing a function of inputting the BCMCS control information, determining whether the inputted BCMCS control information is correct information or not, inserting the BCMCS control information into the system parameter message, and transmitting the system parameter message to the access network.

7. (original) The communication system as claimed in claim 1, wherein the access network includes a base station controller (BSC) and a base station transceiver subsystem (BTS).

8. (original) The communication system as claimed in claim 1, wherein the 1xEV-DO system further comprises a general ATM switch network (GAN), which is connected to the 1xEV-DO access network controller and performs a routing function for transmitted/received packet data regarding the 1xEV-DO service and/or the BCMCS.

9. **(currently amended)** The communication system as claimed in claim 1, wherein the 1xEV-DO system further comprises a packet data serving node (PDSN), which is connected to the GAN and performs a function of transmitting the packet data to said ~~each~~ at least one access terminal through the GAN.

10. (original) The communication system as claimed in claim 1, wherein the 1xEV-DO system further comprises an authorization authentication accounting (AAA), which is connected to the GAN and the packet data serving node and performs a subscriber authentication when an authenticated access terminal requests a packet data service, encodes the packet data by means of an encoding key in order to transmit the packet data through the packet data serving node, and collects accounting data.

11. **(currently amended)** The communication system as claimed in claim 1, wherein the 1xEV-DO system further comprises a data location register, which is connected to the 1xEV-DO access network controller through the GAN by means of a transmission control protocol/Internet protocol (TCP/IP) and manages position information and paging zone of said ~~each~~ at least one access terminal, supports mobility of ~~each~~ at least one access terminal, and controls a session.

12. **(currently amended)** The communication system as claimed in claim 10, wherein the 1xEV-DO system further comprises a BCMCS controller for providing and managing session

information of said ~~each~~ at least one access terminal, receiving subscriber profile information from the authorization authentication accounting, and assigning service authority to said ~~each~~ at least one access terminal.

13. (original) The communication system as claimed in claim 12, wherein the 1xEV-DO system further comprises a BCMCS contents server for receiving at least one BCMCS contents from at least one BCMCS contents provider, encoding the received BCMCS contents, and storing the encoded BCMCS contents.

14. (original) The communication system as claimed in claim 13, wherein the BCMCS contents server converts the encoded BCMCS contents into an IP-based multicast stream and transmits the IP-based multicast stream to the packet data serving node by means of a multicast transmission technology.

15. (original) The communication system as claimed in claim 13, wherein the 1xEV-DO system further comprises at least one BCMCS contents providing server for transmitting the BCMCS contents to the BCMCS contents server by means of a bearer service.

16. **(currently amended)** A method of appointing ~~for appointing~~ an FA mode and/or a BCMCS assignment ratio in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including (i) a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a broadcast/multicast service (BCMCS) to ~~saideach~~ at least one access terminal and (ii) a ~~and the~~ 1xEV-DO access network controller (ANC), the method comprising the steps of:

a) inputting BCMCS control information containing FA (frequency assignment) mode information and BCMCS assignment ratio information and determining whether the inputted

information is valid or not;

b) operating a timer and simultaneously transmitting the BCMCS control information to the access network;

c) determining whether a predetermined check time is ended or not and checking whether a response signal is received from the access network or not; and

d) outputting an error message and/or a re-input screen of the BCMCS control information when the response signal is not received in the predetermined check time;

wherein

the FA mode includes a dedicated BCMCS mode where a specific 1xEV-DO FA, from among 1xEV-DO FAs available for the 1xEV-DO service, is allocated exclusively for the BCMCS, and a mixed BCMCS mode where the specific 1xEV-DO FA is allocated to both the BCMCS and the 1xEV-DO service; and

the inputted BCMCS assignment ratio information indicates, in the mixed BCMCS mode, a ratio of (i) a first portion of frequency capacity of the specific 1xEV-DO FA allocated to the BCMCS to (ii) a second portion of frequency capacity of the specific 1xEV-DO FA allocated to the 1xEV-DO, wherein said ratio is used to allocate the frequency capacity of the specific a-specific 1xEV-DO FA to both the BCMCS and the 1xEV-DO service for providing both the BCMCS and the 1xEV-DO service on said specific 1xEV-DO FA.

17-18. (canceled)

19. (original) The method as claimed in claim 16, wherein, when the inputted BCMCS control information is not valid in step a), the base station manager outputs an error message and/or a re-input screen of the BCMCS control information.

20. (original) The method as claimed in claim 16, wherein, in step b), the BCMCS control information is contained in a system parameter message for the BCMCS and then

transmitted.

21. (original) The method as claimed in claim 16, wherein, in step c), the predetermined check time is a period of time from a time point at which the timer operates to a time point at which the base station manager halts an operation checking whether the response signal is received from the access network or not.

22. (original) The method as claimed in claim 16, wherein the base station manager operates the timer in step b) and simultaneously starts a count, increases a number of times of the count by one time whenever the predetermined check time is ended, and resets the timer.

23. (original) The method as claimed in claim 22, wherein the base station manager repeats the operation checking whether the response signal is received from the access network or not by a predetermined number of times of a count, and outputs an error message and/or a re-input screen of the BCMCS control information when the response signal is not received during a specific period of time required to reach the predetermined number of times of the count.

24. (original) The method as claimed in claim 16, wherein, when the response signal is received in step d), the base station manager outputs a success message reporting successful reception of the BCMCS control information to the access network.

25. **(currently amended)** A method of method for controlling a message according to a broadcast/multicast service (BCMCS) dedicated mode set in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including (i) a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a BCMCS to each said at least one access terminal and (ii) a and the 1xEV-DO access network controller (ANC),

the method comprising the following steps in which steps of:

- a) said at least one AT ~~receiving~~ receives an overhead message transmitted from the access network;
- b) said at least one AT ~~confirming~~ confirms a CDMA channel list contained in the overhead message, ~~selecting~~ selects a frequency assignment (FA) and ~~tuning~~ tunes to the selected FA;
- c) when the BCMCS is requested, said at least one AT ~~determining~~ determines whether the FA to which the access terminal is tuned is a BCMCS FA, and if not, ~~shifting~~ shifts to the BCMCS FA; and
- d) said at least one AT ~~receiving~~ receives the BCMCS simultaneously with the 1xEV-DO service over the BCMCS FA wherein ~~by allocating frequency the~~ the capacity of the BCMCS FA is allocated to both the BCMCS and the 1xEV-DO service in accordance with a predetermined BCMCS assignment ratio.

26. (canceled)

27. (original) The method as claimed in claim 25, wherein, in step a), the overhead message includes at least one message of a Quick_Config message, a Sector_Parameter message, a System_Parameter message, a Neighbor List message and an Access Parameter message.

28. **(currently amended)** The method as claimed in claim 27 ~~claim 25~~, wherein the Sector_Parameter message includes information on the CDMA channel list.

29. (original) The method as claimed in claim 25, wherein, in step b), the CDMA channel list includes information on two or more CDMA frequency assignments.

30. (original) The method as claimed in claim 25, wherein, in step c), the access terminal generates a 1xEV-DO service request signal and transmits the 1xEV-DO service request signal to the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network

controller, when the 1xEV-DO service is requested.

31. (original) The method as claimed in claim 30, wherein the 1xEV-DO access network controller receiving the 1xEV-DO service request signal determines whether the access terminal is tuned to a 1xEV-DO FA or the BCMCS FA.

32. (original) The method as claimed in claim 31, wherein the 1xEV-DO access network controller generates a redirection message or a traffic channel assignment message and transmits the redirection message or the traffic channel assignment message to the access terminal, when it is determined that the access terminal is tuned to the BCMCS FA.

33. (original) The method as claimed in claim 32, wherein the access terminal having received the redirection message or the traffic channel assignment message shifts to the 1xEV-DO FA contained in the redirection message or the traffic channel assignment message, and receives the 1xEV-DO service.

34. (original) The method as claimed in claim 25, wherein the access terminal determines whether the access terminal is tuned to a 1xEV-DO FA or the BCMCS FA when the BCMCS is requested, and performs an operation of shifting to the BCMCS FA when the access terminal is in a state of being tuned to the 1xEV-DO FA.

35. (original) The method as claimed in claim 34, wherein the access terminal stores information on the BCMCS FA and performs a shift operation to the BCMCS FA while changing a frequency for searching and confirming the stored information on the BCMCS FA.

36. **(currently amended)** A method of ~~method for~~ controlling a ~~message according to a~~ broadcast/multicast service (BCMCS) dedicated mode set in a 1xEV-DO system including at least

one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including (i) a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a BCMCS to each~~said at least one~~ access terminal and (ii) a~~and the~~ 1xEV-DO access network controller (ANC), the method comprising the following steps in which~~steps of~~:

a) said at least one AT receives~~receiving~~ an overhead message transmitted from the access network;

b) said at least one AT~~confirming~~ confirms a CDMA channel list contained in the overhead message, selecting~~ing~~ a frequency assignment (FA) and tuning~~ing~~ to the selected frequency assignment;

c) said at least one AT checking information previously stored therein for~~a~~ a stored BCMCS FA when the BCMCS is requested; and

d) said at least one AT~~shifting~~ shifts to the ~~checked~~ BCMCS FA based on the previously stored information and receiving~~receives~~ the BCMCS simultaneously with the 1xEV-DO service over the BCMCS FA wherein frequency~~by allocating the~~ capacity of the BCMCS FA is allocated to both the BCMCS and the 1xEV-DO service in accordance with a predetermined BCMCS assignment ratio.

37. (canceled)

38. (original) The method as claimed in claim 36, wherein the CDMA channel list is recorded in a Sector_Parameter message of the overhead message.

39. **(currently amended)** The method as claimed in claim 38, wherein the CDMA channel list records information on at least one 1xEV-DO FA to which~~and~~ said each at least one access terminal is tuned to a specific 1xEV-DO FA~~before shifting to the BCMCS FA~~.

40. (original) The method as claimed in claim 36, wherein, in step c), the access terminal generates a 1xEV-DO service request signal and transmits the 1xEV-DO service request signal to the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network controller, when the 1xEV-DO service is requested.

41. (original) The method as claimed in claim 40, wherein the 1xEV-DO access network controller having received the 1xEV-DO service request signal generates a redirection message or a traffic channel assignment message and transmits the redirection message or the traffic channel assignment message to the access terminal.

42. **(currently amended)** A method of ~~method for controlling a message according to a~~ broadcast/multicast service (BCMCS) ~~mixed mode set in a 1xEV-DO system including a plurality of at least one access terminals (ATs), an access network (AN) and a base station manager (BSM), the access network including (i) a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to simultaneously provide both a 1xEV-DO service and the BCMCS to one or more of each said access terminals, and (ii) a 1xEV-DO access network controller (ANC), the method comprising the following steps performed by the 1xEV-DO ANC steps of:~~

~~the 1xEV-DO access network controller~~ receiving mixed BCMCS mode information and BCMCS assignment ratio information from the BSM ~~base station manager~~ and storing the received information,

based on the mixed BCMCS mode information, allocating frequency capacity of a specific 1xEV-DO FA to both the BCMCS and the 1xEV-DO service; and

controlling -a 1xEV-DO service of ~~the~~ messages, which include both the 1xEV-DO service and the BCMCS and are communicated over the specific 1xEV-DO FA, according to a 1xEV-DO message appointment ratio defined by the BCMCS assignment ratio information, wherein said controlling comprises:

periodically determining whether or not the 1xEV-DO service of a message communicated over said specific 1xEV-DO FA exceeds the 1xEV-DO message appointment ratio; and

if the 1xEV-DO service of the message exceeds the 1xEV-DO message appointment ratio:

selecting at least one access terminal, which receives the 1xEV-DO service when the 1xEV-DO service of the message exceeds the 1xEV-DO message appointment ratio, as a shift-targeted access terminal;

assigning another specific ~~specific~~ 1xEV-DO FA to said shift-targeted access terminal; and

providing the 1xEV-DO service on said another ~~the specific~~ 1xEV-DO FA to said each at least one shift-targeted access terminal, thereby maintaining the 1xEV-DO service of messages communicated over said specific 1xEV-DO FA at or below the 1xEV-DO message appointment ratio.

43. (previously presented) The method as claimed in claim 42, wherein the BCMCS assignment ratio information contains ratio information for using a BCMCS FA resource, which is appointed for the BCMCS, in the BCMCS mixed mode.

44. (previously presented) The method as claimed in claim 43, wherein the 1xEV-DO message appointment ratio and the BCMCS assignment ratio together define from the entire BCMCS FA resource.

45. **(currently amended)** The method as claimed in claim 42, wherein the information on said another ~~the specific~~ 1xEV-DO FA is recorded in a redirection message or a traffic channel assignment message and then transmitted to said each at least one shift-targeted access terminal.

46. **(currently amended)** The method as claimed in claim 45, wherein said each at least one shift-targeted access terminal having received the redirection message or the traffic channel

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assignment message shifts to said another ~~the specific~~ 1xEV-DO FA and receives the 1xEV-DO service over said another 1xEV-DO FA instead of said specific 1xEV-DO FA.